

Remarks

Claims 1-74 and 89-91 are pending in the application. Claims 75-88 have been canceled. The Applicants expressly reserve the right to prosecute in subsequent divisional applications or continuing applications or both claims covering the subject matter of the claims canceled to conform with the Applicants election in response to the Restriction Requirement. 35 U.S.C. §§ 120-121. Claims 27, 28 and 34-37 stand withdrawn as being drawn to a non-elected species. Upon allowance of a generic claim, Applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141.

In accordance with 37 CFR 1.78, the specification has been amended to include a specific reference to an earlier application from which benefits are being claimed. The specification has also been amended to comply with proper usage of trademarks.

Claims 1, 27, 29, 31, 33, 39, 42, 45, 45, 48, 49, 52-54, 56-58, 61-63, 67 and 70 have been amended, and claims 89-91 have been added. Support for the new claims and claim amendments can be found throughout the application, including the claims as originally filed. Importantly, no new matter has been added to the claims. The amendments to the claims should not be construed to be an acquiescence to any of the rejections. The amendments to the claims are being made solely to expedite the prosecution of the above-identified application. The Applicant reserves the right to further prosecute the same or similar claims in subsequent patent applications claiming the benefit of priority to the instant application. 35 USC § 120.

Response to Rejections under 35 U.S.C. 112¶1

Claim 64 stands rejected under 35 U.S.C. 112¶1 based on the Examiner's contention that the specification fails to describe how to make a "permanent" coating comprising an effective amount of anti-fouling compound represented by general formula 1; which coating also releases the compound when in contact with a surface of an article. The Applicants respectfully disagree with this contention.

The Applicants direct the Examiner to page 14, line 19, of the specification for the definition of “coating.” There, coating is defined as any temporary, semi-permanent or permanent layer that may contain an anti-fouling (AF) agent. Therefore, coating as defined and used throughout the specification is the layer itself in which the AF agent is dispersed or dissolved. Moreover, speaking generally, a layer may be temporary, semi-permanent or permanent depending on its chemical composition regardless of whether the compounds of formula 1 are present or have been released. In other words, the Applicants respectfully maintain that the characteristics, e.g., temporary or permanent, of a ‘coating’ do not place any limitations on a compound, e.g., an anti-fouling compound, comprised by the coating, or vice versa.

Claims 5, 12, 13, 17, 21, 22, 43, 50, 51, 55, 59, and 60 stand rejected under 35 U.S.C. 112¶1 based on the Examiner’s contention that the specification does not supply examples demonstrating that any compounds within the scope of these claims are anti-fouling compounds. The Examiner contends that the only compounds for which data of anti-fouling capabilities are presented are zosteric acid, octyl sulfate and methyl sulfate. The Applicants respectfully disagree with this contention. Specifically, the Applicants direct the Examiner’s attention to Example 7 on page 57 of the specification. In that Example, 4-*t*-pentyl phenyl chlorosulfate (4-PPCS) was shown to be 100% effective in blocking sea urchin fertilization in the range of 1-10 mM; the concentration range in which zosteric acid was effective. Importantly, the Applicants assert that 4-PPCS is encompassed by Formula 1, when Z is 4-*t*-pentyl phenyl (an alkyl phenyl), Y is O, and X is Cl. Therefore, this compound is within the scope of claims 5, 12, 13, 17, 21, 22, 43, 50, 51, 55, 59, and 60.

Accordingly, the Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. 112¶1.

Response to Rejections under 35 U.S.C. 112¶2

Claims 1-26, 29-33 and 38-74 stand rejected under 35 U.S.C. 112¶2 based on the Examiner’s contention that the phrase “wherein the compound is released from the surface” in claim 1 renders the claim indefinite because it is not clear if the compound is

actually part of the surface of the claimed system. The Applicants have amended claim 1 to make the compound “releasable” in accordance with the Examiner’s suggestion. Importantly, this change does not reflect a change in the scope of the invention for which protection is sought.

Claim 29 stands rejected under 35 U.S.C. 112¶2 based on the Examiner’s contention that it is not clear how a decrease in the amount of plant pathogens attached to a plant or plant component is relevant to a system adapted for use in a health-related environment. The Applicants respectfully disagree with this contention. Claims 29 and 1, from which claim 29 depends, are drawn to a system comprising a biofilm resistant surface. Because the only limitation on the system is that it comprises a biofilm-resistant surface, the system can take many forms. The phrase “for use in a health-related environment” is a functional limitation in the preamble of the claim. The Applicants respectfully submit that it is clear from the wording of claim 29 that the system is a plant and that the biofilm-resistant surface decreases the amount of pathogens attached to the plant by a factor of four (4) compared to a control lacking a compound of Formula 1.

The Examiner also contends that the phrase “over a defined period of time” with no limitation on the defined period of time renders claim 29 indefinite. The Applicants have amended claim 29 to remove the phrase “over a defined period of time.” A defined period of time is implied by the claim which compares the system of claim 29 to a control (i.e., the system of claim 29 and a control are compared to each other over an equal period of time).

Claim 31 stands rejected under 35 U.S.C. 112¶2 based on the Examiner’s contention that the basis for the percents is not known. Accordingly, the Applicants have amended claim 31, replacing both instances of “%” with “mg/mL”. The Applicants respectfully submit that amended claim 31 complies with the requirements of 35 USC 112¶2 because one of ordinary skill in the relevant art would understand the metes and bounds of the limitations expressed in mg/mL.

Claim 39 and its dependents stand rejected under 35 U.S.C. 112¶2 based on the Examiner’s contention that it is unclear if these claims are drawn to a coating, *per se*, or

to the combination of a coating and a graft, implant or medical device. The Applicants have amended claim 39 to clarify that the claims are drawn to a coating *per se*, comprising releasable compounds of Formula 1.

Claim 64 stands rejected under 35 U.S.C. 112¶2 based on the Examiner's contention that it is unclear how a coating can comprise a compound of formula 1, release it over time, and still be permanent. As explained under the section *Response to Rejections under 35 U.S.C. 112¶1*, the descriptor "permanent" refers to the chemical composition of the coating which comprises a compound of formula 1. In time the coatings of both claims 39 and 64 may release all compounds of formula 1, but claim 64 further limits claim 39 by specifying that the remaining coating is permanent rather than temporary or semi-permanent.

Claim 65 stands rejected under 35 U.S.C. 112¶2 based on the Examiner's contention that it is not clear how a decrease in the amount of plant pathogens attached to a plant or plant component is relevant to a coating applied to surface of a graft, implant or medical device. The Applicants respectfully submit that the cancellation of claim 65 renders this rejection moot.

Claim 67 stands rejected under 35 U.S.C. 112¶2 based on the Examiner's contention that the basis for the percents is not known. Accordingly, the Applicants have amended claim 67, replacing both instances of "%" with "mg/mL". The Applicants respectfully submit that amended claim 67 complies with the requirements of 35 USC 112¶2 because one of ordinary skill in the relevant art would understand the metes and bounds of the limitations expressed in mg/mL.

Accordingly, the Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. 112¶2.

Response to Rejections Under 35 U.S.C. § 102(b)

Claims 1-4, 7-11, 16, 19, 20, 25, 26, 29-33, 38-42, 45-49, 54, 57, 58, 63 and 65-73 stand rejected under 35 U.S.C. § 102(b) based on the Examiner's contention that they are anticipated by Zimmerman et al., U.S. Patent No. 5,384,176, ("the '176 patent"). Independent claims 1 and 39 have been amended to define the permitted substituents on

Z. Importantly, the '176 patent discloses only zosteric acid and other sulfate esters of a small number of phenolic acids. Specifically, the '176 patent discloses only alkenyl-substituted or acid-substituted phenyl groups as "Z" in formula 1. However, alkenyl and acid substituents are not within the scope of the permitted substituents on Z in amended claims 1 and 39.

Accordingly, the Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. § 102(b) over the '176 patent.

Response to Rejections Under 35 U.S.C. § 102(a) or § 102(b)

Claims 39-42, 44-49, 52-54, 56-58, 61-63, 65, and 69-73 stand rejected under 35 U.S.C. § 102(a)/(b) based on the Examiner's contention that they are anticipated by the Applicants' own admission. Specifically, the Examiner contends that on page 47, lines 6-7 and 12, of the specification reference is made to an aqueous octyl sulfate solution from Stepan Chemical which constitutes a coating. The Applicants have amended independent claim 39 such that when Z is an unbranched alkyl it is a C₁-C₇ alkyl. Therefore, octyl sulfate is not within the scope of amended claim 39 and its dependents. The Examiner also groups methyl sulfate with octyl sulfate, but does not indicate where in the specification a commercially available methyl sulfate solution is disclosed.

Moreover, without offering any evidence the Examiner states that any solution of octyl sulfate or methyl sulfate that was commercially available prior to the filing date of the present invention, and any disclosure in a printed publication of such a solution prior to the filing date of the present invention, anticipates a liquid coating comprising the sulfate under 35 U.S.C. § 102(a) or (b). The Applicants respectfully submit that in the absence of any evidentiary showing by the Examiner's part, a coating comprising methyl sulfate is not anticipated.

Accordingly, the Applicants respectfully request the withdrawal of the rejection of the claims under 35 U.S.C. § 102(a) or (b) over the Applicants' own specification.

Miscellaneous

Claims 27, 33, 63, and 70 have been amended to correct punctuation errors.


Fees

The Applicants believe that no additional fees are due in connection with the filing of this paper. Nevertheless, the Director is hereby authorized to charge any additional required fee to our Deposit Account, 06-1448.

Conclusion

In view of the above amendments and remarks, the Applicants believe that the pending claims are in condition for allowance. If a telephone conversation with Applicant's Agent would expedite prosecution of the application, the Examiner is urged to contact the undersigned. A clean version of the claims follows.

Respectfully submitted,
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